

## AMENDMENT TO THE SPECIFICATION

Please replace the paragraph starting on page 4, line 9 with the following amended paragraph:

~~Fig. 1 shows~~ Figs. 1a and 1b show the schematics of lattice mismatch (Fig. 1a) and band offset (Fig. 1b) in AlGa<sub>N</sub> and InGa<sub>N</sub> grown on GaN.

Please replace the paragraph starting on page 6, line 3 with the following amended paragraph:

Referring now to ~~Figure 1~~ Figures 1a and 1b, the schematics of lattice mismatch and band offset in AlGa<sub>N</sub> and InGa<sub>N</sub> grown on GaN are shown. As shown in ~~(a)~~ Figure 1a, strain free growth of 50% AlGa<sub>N</sub> on GaN 10 yields a positive lattice mismatch of roughly 0.003 nm. However, strain free growth of only 10% InGa<sub>N</sub> on GaN 12 is required to yield a similar negative lattice mismatch. As shown in ~~(b)~~ Figure 1b, the same 50% AlGa<sub>N</sub> on GaN 14 has a band offset of about 1.4 eV while the same 10% InGa<sub>N</sub> on GaN 16 has a band offset of only about 0.2 eV. Based on a linear extrapolation of lattice constants as functions of molar fractions, it is estimated that quaternary Al<sub>x</sub>In<sub>y</sub>Ga<sub>1-x-y</sub>N layers with an Al/In mole fraction ratio of 5 should be nearly lattice matched to GaN while the band offset will be about 1.2 eV.